patients per annum following colony stimulating factors, predominantly GCSF +/- chemotherapy. We observed that in 5 patients after routine chemotherapy, PEG-filigrastim mobilised sufficient numbers of CD34+ cells for collection, with impressive CD34 counts both in the blood and in the final CD34/kg collected.

This has led to a 2 year prospective observational study since July 2006 to investigate the numbers of CD34+ cells in the blood of children following administration of PEG-filigrastim post chemotherapy. The aim is to determine the correlation between the recovering white cell count (WCC) and increasing CD34+ count. This will guide the commencement of PBSC harvesting after the use of PEG-filigrastim to mobilise PBSC's. All children in the oncology unit who are already scheduled to receive PEG-filgrastim are eligible. The dose of PEG-filgrastim is based on weight. It is not administered to children <10kg.

Twelve patients have been enrolled on the study since its commencement in July 2006.These patients received subcutaneous PEG-filigrastim following protocol driven chemotherapy. Five of the twelve patients achieved a peripheral CD34 count of $> 20 \times 10^6$/ml which is the minimum CD34 count required at CHW for commencement of PBSC harvest. Three of the 12 patients did not achieve a peripheral CD34 count $> 8 \times 10^6$/ml over a 20 day period with increasing WCC, the average CD34 count being $<1 \times 10^6$/ml. Four patients are awaiting count recovery post chemotherapy + PEG-filigrastim at time of report.

Early results from this study indicate that PEG-filigrastim may be considered for patients requiring PBSC harvest in the paediatric setting. The once only injection allows greater compliance with paediatric patients.

Optimum timing remains a question which should be answered with continued accrual of patient numbers into the study.

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THE DUKE PEDIATRIC BLOOD AND MARROW TRANSPLANT NURSING GRADUATE INTEGRATION PROGRAM

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Critical care nursing has a reputation of being both skillfully demanding along with emotionally challenging. To ensure the greatest quality of care to patients it is necessary to design orientation programs for new nurses that prepare them for the challenges that will arise. Rapidly advancing technology, busy and complex medication programs, and treatment modalities have resulted in a tremendous demand for highly trained and well educated nursing staff. The prolonged nursing shortage has greatly impacted the nursing work force. Historically highly specialized, critical care areas, hired only experienced nurses. The demand for nurses in these areas has far exceeded the supply and most institutions are now faced with the challenge of integrating new nursing graduates into highly complex work environments. The Duke Pediatric Blood and Marrow Transplant Unit is no exception. This type of work environment has been classified as one of the most intensive and complex in nursing. The patients are critically ill and the medical and supportive care needs have been known to overwhelm even the most experienced nurse. The integration of the new graduate into this type of environment has created unique challenges for both experienced staff and nursing leadership. The purpose of this abstract is to present the Duke Pediatric Blood and Marrow Transplant "Nursing Graduate Integration Program". The program was initiated in 2006 after two consecutive years of low retention (particularly among new graduates). The new graduates who left the unit described feeling overwhelmed, stressed and unprepared for the rigorous demands of these patients. Typically new graduates left the unit for jobs associated with decreased acuity and less stress. The poster will highlight the key components of our program including safety, multidisciplinary collaboration and moral support in attempt to increase quality of care and retention rates.

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ENGRAFTMENT SYNDROME: A COMPLICATION OF HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Engraftment syndrome is an important complication causing early morbidity and nonrelapse mortality in children undergoing hematopoietic stem cell transplantation. It is used to describe the symptoms secondary to cytokine release as a reaction to chemotherapy and radiation therapy. In some cases, it cannot be distinguished from hyperacute graft versus host disease following transplantation. Conditioning regimens prior to transplantation cause tissue damage which produces release of cytokines. This production of cytokines leads to increase in capillary permeability resulting in loss of intravascular fluids into the interstitial space. Engraftment syndrome can occur before or along with neutrophil recovery following cytotoxic chemotherapy. In most cases, fever and erythroderma are the hallmarks of the syndrome. In severe cases, aseptic shock syndrome with multiple organ failure can occur. Clinical manifestations of engrafment syndrome include: fever without identifiable infectious etiology, erythematous rash, diarrhea, renal impairment, ascites, and non-cardiogenic pulmonary edema. High-dose systemic corticosteriods have been shown to decrease the duration and lessen the severity of complications related to this syndrome. Other treatment is supprotive. Nurses play an important role in recognizing early manifestations of engraftment syndrome by monitoring strict I & O's, daily weights, respiratory and hemodynamic status.

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DEVELOPMENT OF A MULTIDISCIPLINARY PROSPECTIVE STUDY TO EVALUATE THE PREVALENCE OF BK VIRUS IN HEMORRHAGIC CYSTITIS (HC) PATIENTS IN UNRELATED DONOR HEMATOPOIETIC STEM CELL TRANSPLANTATION (UD HSCT) RECIPIENTS

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HC is a severe complication associated with HSCT. Conditioning regimen, radiotherapy and use of cyclophosphamide are described as risk factors; we previously determined that UD HSCT is independently associated with higher prevalence of HC (El-Zimaity et al. Blood 2004).

Developed as a quality improvement project, the main goal of this prospective study is to evaluate whether BK viruria is a contributing risk factor for development of HC in patients submitted to UD HSCT. The APN role for this ongoing study is screening and enrolling eligible patients, and then ordering urine cytology for polyoma virus and PCR for BK virus in urine before the first day of conditioning regimen. APNs also participate in close follow-up during inpatient period, regarding symptons or signs of HC, education for interdisciplinary team members, and informing staff of ongoing results. Anticipated nursing implications include infusion of platelet concentrates, IVIG, and close monitoring of urine viral test.

Sixty-two consecutive patients who underwent UD HSCT from 09/05 to 05/06 have completed at least 60 days of follow-up post HSCT. Results with median follow-up of 97 days include: BK PCR was positive in 28 patients (45%) previously to transplant; 11 patients (18%) developed HC, at a median of 25 days after HSCT. In the PCR positive group, 7 patients (25%) had HC, versus 4 (12%) in the PCR-negative group (hazard ratio = 3.4 for a positive PCR; log-rank $p = 0.057$). 100-day cumulative incidence of HC is 30% for PCR-positive and 15% for PCR-negative patients (not a statistically significant result).

Conclusion: the role of BK viruria in this setting is unclear. This quality improvement project is an example of the importance of a multidisciplinary taskforce and the APN role in the development of clinical prospective studies in HSCT.